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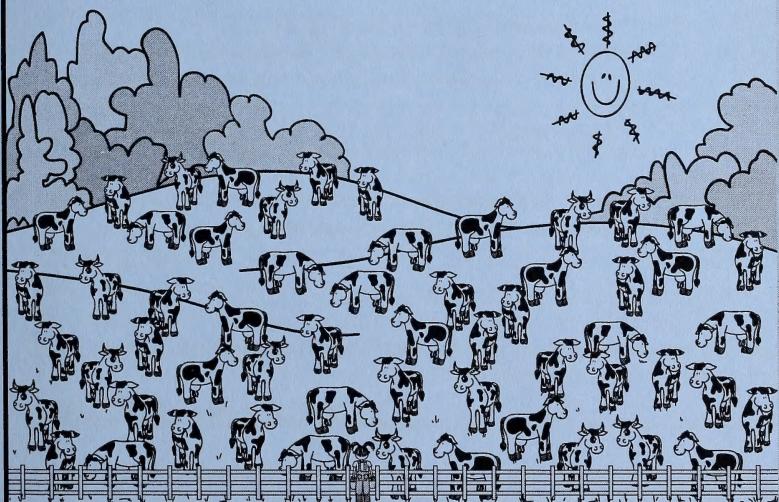
GRADE THREE MATHEMATICS: MODULE 6

ADDITION AND SUBTRACTION OF LARGE NUMBERS

Home Instructor's Guide: Days 1-9

and

Assignment Booklet 6A



Learning
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LEARNING

Grade Three Mathematics

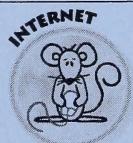
Module 6: Addition and Subtraction of Large Numbers

Home Instructor's Guide: Days 1–9 and Assignment Booklet 6A

Learning Technologies Branch

ISBN 0-7741-2316-8

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	✓
General Public	
Other	



You may find the following Internet sites useful:

- Alberta Learning, <http://www.learning.gov.ab.ca>
- Learning Technologies Branch, <http://www.learning.gov.ab.ca/ltb>
- Learning Resources Centre, <http://www.lrc.learning.gov.ab.ca>

The use of the Internet is optional. Exploring the electronic information superhighway can be educational and entertaining. However, be aware that these computer networks are not censored. Students may unintentionally or purposely find articles on the Internet that may be offensive or inappropriate. As well, the sources of information are not always cited and the content may not be accurate. Therefore, students may wish to confirm facts with a second source.

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MODULE 6: ADDITION AND SUBTRACTION OF LARGE NUMBERS

INTRODUCTION

Module 6 focuses on the addition and subtraction of large numbers. Addition and subtraction of three-digit numbers are introduced. The student is encouraged to develop proficiency with calculations and to apply this skill to problem-solving situations.

The student is first introduced to three-digit addition using base ten blocks. Using concrete materials allows the student to visualize the process of addition and subtraction with large numbers. The student is introduced to several strategies for both addition and subtraction. Developing personal strategies for solving calculations, for making choices about which method to use, and for justifying that choice are encouraged.

The student reviews some methods for verifying answers and applies them to three-digit addition and subtraction.

Problem-solving skills continue to be emphasized. The student uses personal calculation strategies to solve a variety of problems. The guess-and-check method of problem solving is discussed. The student has opportunities to create problems as well as solve them.

Addition and subtraction skills are practised in the timed exercises. Continue to practise multiplication facts as well.

Help the student understand the relevance of addition and subtraction by calling the student's attention to these skills used in life situations. As you balance your chequebook, work on family budgeting, or make other calculations, explain what you are doing. Involve your student in calculations when shopping for family purchases. You can even set up "pretend" shopping experiences using catalogues, flyers, or magazines. For example, ask your student to calculate what he or she could buy if he or she had a clothing budget of \$200 or a gift budget of \$100 to purchase family gifts.

In this module your student is introduced to self-correcting activities by using the "Answer Key to the Self-Marking Activities." This answer key is now in the Appendix at the back of the Student Module Booklet for easy access. Assist the student in locating and using this self-assessment tool. Your student will need your guidance checking the work completed when the Answer Key icon in the Student Module Booklet appears. You will find further information in the Student Module Booklet in the margin notes to the home instructor.

DAILY SUMMARY

DAY 1: The student reviews how to add two-digit numbers. Different addition strategies are reviewed. The student relates these skills to the addition of numbers with three digits. Base ten blocks are used to illustrate the process of addition. The problems in today's lesson do not require regrouping.

DAY 2: More addition strategies are reviewed and applied to the addition of three-digit numbers. The student practises some written methods of solving addition equations. Some mental math strategies are also discussed.

DAY 3: Estimation skills are the focus for this lesson. The student learns some ways to estimate answers and reviews rounding numbers. These skills are applied to verifying answers and solving problems that do not require an exact calculation.

DAY 4: Regrouping or “carrying” is discussed in this lesson. The student recalls how regrouping was done with two-digit numbers and extends that skill to add three-digit numbers. Base ten blocks are used to illustrate the process. It is important that the student have experience with concrete materials to develop an understanding of the regrouping process and to understand why it becomes necessary to regroup hundreds, tens, and ones. There is no assignment in the Assignment Booklet for Day 4, but you will time the student doing the addition number facts today. Assist the student to mark the items completed and enter the scores on the Math Facts Graph in the Appendix.

DAY 5: Today’s work focuses on more ways to solve addition problems that require regrouping. The traditional written method for addition with regrouping is discussed. An alternative method for adding large numbers is also introduced.

DAY 6: It is important that the student is allowed to develop personal strategies that make sense to him or her. The preceding lessons have presented the student with a variety of strategies for solving addition problems. A spinner game is introduced to allow the student to create addition equations and solve them. Encourage the student to use the most efficient and personally meaningful strategies to solve the equations. You may want to keep the spinners from this game and use them to create worksheets for extra practice. If there is more than one student, they may create equations for classmates to solve. There is no assignment in the Assignment Booklet for Day 6, but you will time the student doing addition number facts today. A list of pertinent websites is also included in this lesson.

DAY 7: Another game is introduced in this lesson that involves some strategy in generating numbers and encourages the student to become more proficient with addition calculations. The student uses number cards and keeps a running total to reach a target number.

DAY 8: Today’s lesson deals with calculator skills. The use of calculators to check answers is discussed. The student also examines when to use a calculator for solving problems and when other methods may be more efficient.

DAY 9: Problem-solving skills are further developed in this lesson. The student learns about the guess-and-check strategy. Several problem situations are posed and the student is encouraged to estimate and check to find the correct answer. Be sure that all the pages in the Assignment Booklet are complete for this part of the module. You will be timing the student for the addition number facts exercise to be submitted to the teacher. Use the Items for Mailing checklist to ensure that you include all items for the teacher.

ASSIGNMENT BOOKLET 6A

Grade Three Mathematics
Module 6: Days 1–9

Home Instructor's Comments and Questions

Home Instructor's Signature

FOR SCHOOL USE ONLY

Assigned Teacher:

Date Assignment Received:

Grading:

Additional Information:

FOR HOME INSTRUCTOR USE (if label is missing or incorrect)

Student File Number:

Date Submitted:

Apply Module Label Here

Name

Address

Postal Code

*Please verify that preprinted label is for
correct course and module.*

Teacher's Comments

Teacher's Signature

Home Instructor: Keep this sheet when it is returned to you as a record of the student's progress.

INSTRUCTIONS FOR SENDING IN THIS DISTANCE LEARNING ASSIGNMENT BOOKLET

When you register for distance learning courses, you are expected to send in Assignment Booklets for corrections regularly. Try to send each Assignment Booklet as soon as you have completed it. Before sending your Assignment Booklet, please check the following:

- Are all the assignments completed? If not, explain why.
- Has your work been reread to be sure the spelling and details are correct?
- Is the record form filled out and the correct module label attached?

MAILING

1. Postage Regulations

Do **not** enclose letters with Assignment Booklets.

Send all letters in a separate envelope.

2. Postage Rates

Take your Assignment Booklet to the post office and have it weighed. Attach enough postage and seal the envelope. Assignment Booklets will travel faster if correct postage is used and if they are in large envelopes that are no more than two centimetres thick.

FAXING

1. Assignment Booklets may be faxed. Contact your teacher for the fax number.
2. All faxing costs are the responsibility of the sender.

E-MAILING

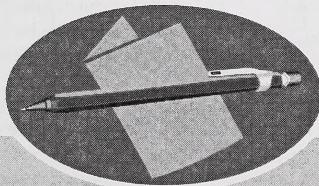
Assignment Booklets may be e-mailed. Contact your teacher for the e-mail address.

Grade Three Mathematics

Module 6

Addition and Subtraction of Large Numbers

ASSIGNMENT BOOKLET 6A



**Learning
Technologies
Branch**

Alberta
LEARNING

Grade Three Mathematics

Module 6: Addition and Subtraction of Large Numbers
Assignment Booklet 6A
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1. Journal Entry

What strategies do you think will be most useful for adding large numbers? Why?

2. Use your base ten blocks and place-value mat to help you solve the equations.

Draw the base ten blocks to show your answer. Use simple shapes to draw the base ten blocks.

a. $420 + 116 =$ _____

Hundreds (100)	Tens (10)	Ones (1)

b. $58 + 231 =$ _____

Hundreds (100)	Tens (10)	Ones (1)

c. $237 + 101 =$ _____

Hundreds (100)	Tens (10)	Ones (1)

1. Use your favourite strategy to solve each equation.

a.
$$\begin{array}{r} 523 \\ + 420 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 216 \\ + 62 \\ \hline \end{array}$$

c.
$$\begin{array}{r} 425 \\ + 173 \\ \hline \end{array}$$

d.
$$\begin{array}{r} 500 \\ + 300 \\ \hline \end{array}$$

e.
$$\begin{array}{r} 431 \\ + 200 \\ \hline \end{array}$$

f.
$$\begin{array}{r} 510 \\ + 68 \\ \hline \end{array}$$

g.
$$\begin{array}{r} 392 \\ + 206 \\ \hline \end{array}$$

h.
$$\begin{array}{r} 529 \\ + 140 \\ \hline \end{array}$$

i.
$$\begin{array}{r} 43 \\ + 300 \\ \hline \end{array}$$

2. Solve the following problems in your mind. Explain your thinking.

a. $500 + 400 =$ _____

b. $33 + 200 =$ _____

1. Estimate the sum by rounding the numbers to the nearest hundred. This means you do not have to find the exact answer.

Example:
$$\begin{array}{r} 247 \longrightarrow 200 \\ + 325 \longrightarrow + 300 \\ \hline 500 \end{array}$$

a.
$$\begin{array}{r} 439 \\ + 295 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 561 \\ + 115 \\ \hline \end{array}$$

c.
$$\begin{array}{r} 478 \\ + 390 \\ \hline \end{array}$$

2. Try doing these problems by rounding in your mind. Estimate the sum of each to the nearest hundred. You do not have to find the exact answer.

a. $105 + 615 = ?$ Estimate: _____

b. $295 + 621 = ?$ Estimate: _____

c. $337 + 198 = ?$ Estimate: _____

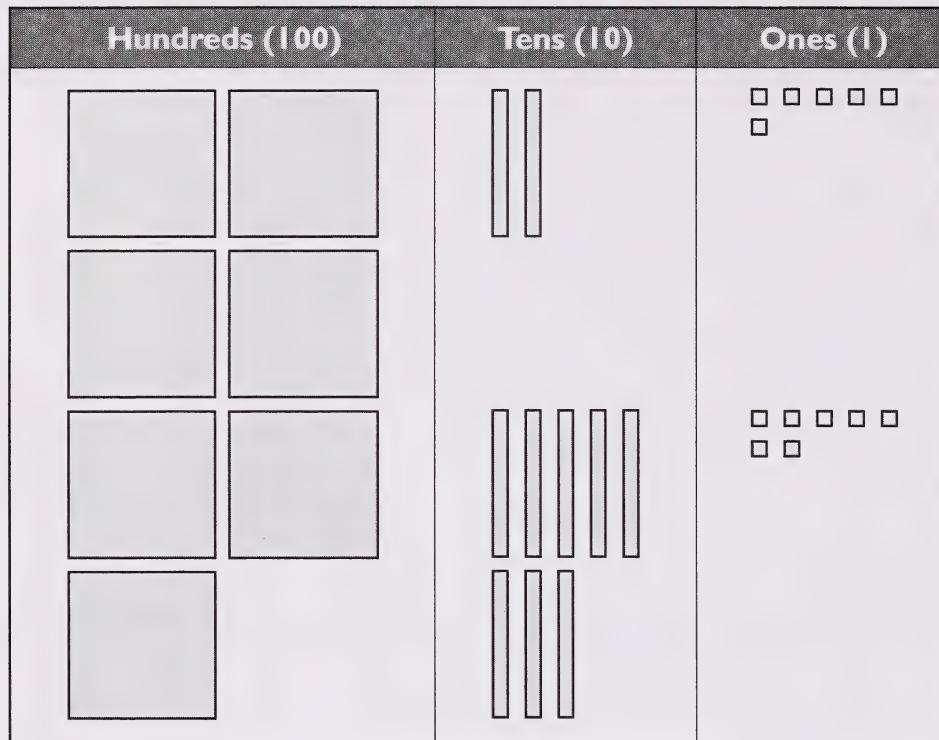
d. $712 + 98 = ?$ Estimate: _____

3. Solve each problem. Show your work. Write the answer in a sentence.

a. For the fishing game, Luke's class will make 361 bags with small treats. The class has bought 102 toy tops and 271 bubble bottles. Are there enough toys to put 1 in each bag?

b. The class also has 246 gum balls and 128 gum sticks. Are there enough gum pieces to put 1 in each bag?

1. This place-value mat shows the addition problem $426 + 387$.



There are 7 hundreds, 10 tens, and 13 ones.

a. Another way to write this is $700 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$.

b. When you regroup the tens and ones there are hundreds,
 tens, and ones.

c. $426 + 387 = \underline{\hspace{2cm}}$

2. a. Use your base ten blocks and place-value mat to show the equation $139 + 265 = \underline{\hspace{2cm}}$. Draw simple blocks for the problem and answer the questions that follow.

Hundreds (100)	Tens (10)	Ones (1)

b. There are _____ hundreds, _____ tens, and _____ ones.

c. Another way to write this is $300 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$.

d. When you regroup the tens and ones there are _____ hundreds, _____ tens, and _____ ones.

e. $139 + 265 = \underline{\hspace{2cm}}$

3. a. Use your base ten blocks and place-value mat to show the equation $257 + 95 = \underline{\hspace{2cm}}$. Draw simple blocks for the problem and answer the questions that follow.

Hundreds (100)	Tens (10)	Ones (1)

b. There are _____ hundreds, _____ tens, and _____ ones.

c. Another way to write this is $200 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$.

d. When you regroup the tens and ones there are _____ hundreds, _____ tens, and _____ ones.

e. $257 + 95 = \underline{\hspace{2cm}}$

4. Use your favourite strategy to solve the equations.

a.
$$\begin{array}{r} 675 \\ + 247 \\ \hline \end{array}$$

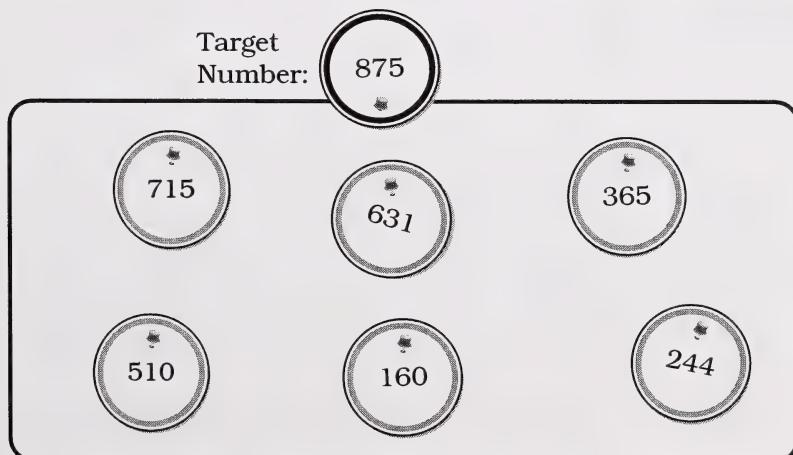
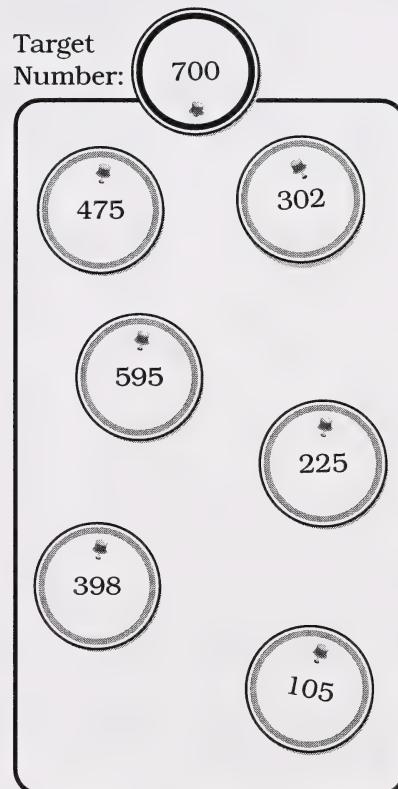
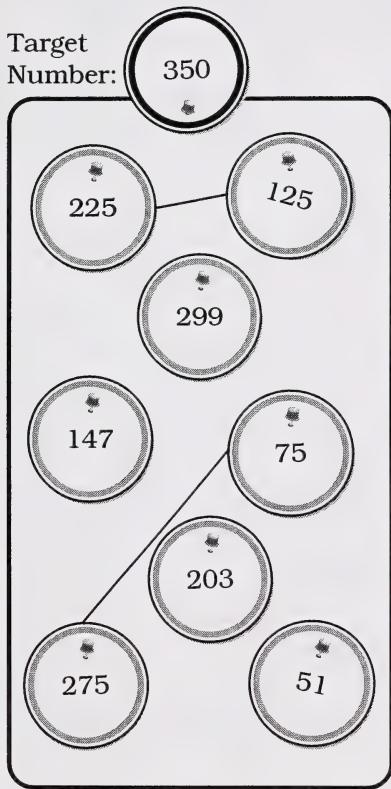
b.
$$\begin{array}{r} 439 \\ + 148 \\ \hline \end{array}$$

c.
$$\begin{array}{r} 582 \\ + 159 \\ \hline \end{array}$$

d.
$$\begin{array}{r} 87 \\ + 885 \\ \hline \end{array}$$

Draw lines to join each of the number pairs that add up to the target number. Two examples are done for you. Begin by finding any other pairs that total 350.

Hint: Use your estimating skills to help guess which partners will equal the target number.



1. Journal Entry

When you solve any problem, you have to decide how you are going to solve it. Number sentences can be solved in your mind, with a pencil and paper, with a calculator, or by estimating.

Which way do you solve most math problems in your Student Module Booklets and Assignment Booklets? Which way do you solve most math problems in everyday life?

Ask your home instructor how he or she solves math problems in daily life. Then finish the sentence.

My home instructor _____

There are many ways to solve number sentences.

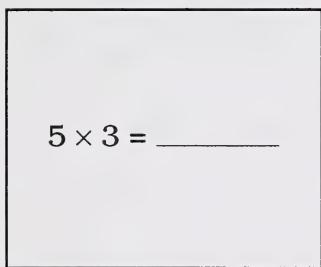
using mental math

estimating

using pencil and paper

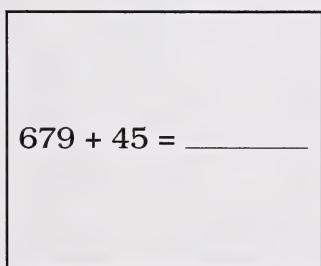
using a calculator

2. How would you find the answer to each of these equations? Choose one way and explain why you chose it.

a.  I would _____.

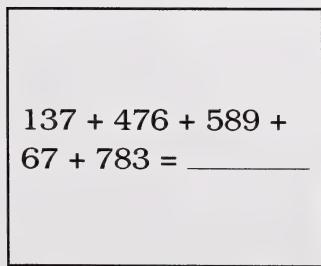
$$5 \times 3 = \underline{\hspace{2cm}}$$

Explain: _____

b.  I would _____.

$$679 + 45 = \underline{\hspace{2cm}}$$

Explain: _____

c.  I would _____.

$$137 + 476 + 589 + \\ 67 + 783 = \underline{\hspace{2cm}}$$

Explain: _____

d. I would _____.

699 + 452 is about _____

Explain: _____

3. Use your calculator to check the problems below. Put a check mark (✓) beside the problems with correct answers. Put an ex (✗) beside the problems with an incorrect answer. Write the correct answer beside each incorrect answer.

a. $593 + 247 = 740$

b. $34 + 157 + 61 + 354 = 606$

c.
$$\begin{array}{r} 683 \\ + 398 \\ \hline 1071 \end{array}$$

d.
$$\begin{array}{r} 234 \\ 96 \\ + 458 \\ \hline 788 \end{array}$$

e.
$$\begin{array}{r} 609 \\ + 279 \\ \hline 888 \end{array}$$

f.
$$\begin{array}{r} 947 \\ + 37 \\ \hline 974 \end{array}$$

Use the information from Sarah's chart to answer the questions. Show your work. Write your answer in a sentence.

	Nickels	Dimes	Quarters
Sarah	128	230	52
Oliver	85	214	38
Mom	183	227	67
Dad	169	198	115

1. Who has a total of 294 dimes and quarters?

2. Which two family members have 441 dimes altogether?

3. Who has a total of 482 nickels, dimes, and quarters?

4. Use the information in the chart to make up a guess-and-check problem. Write it on the lines.

Timed exercise: 2 minutes

Ask your home instructor to time you for 2 minutes. Do as many questions as you can in two minutes. Write how many you completed.

$8 + 3 = \underline{\hspace{2cm}}$ $7 + 6 = \underline{\hspace{2cm}}$ $9 + 6 = \underline{\hspace{2cm}}$ $7 + 4 = \underline{\hspace{2cm}}$

$8 + 5 = \underline{\hspace{2cm}}$ $7 + 3 = \underline{\hspace{2cm}}$ $6 + 5 = \underline{\hspace{2cm}}$ $5 + 5 = \underline{\hspace{2cm}}$

$6 + 2 = \underline{\hspace{2cm}}$ $8 + 4 = \underline{\hspace{2cm}}$ $8 + 1 = \underline{\hspace{2cm}}$ $9 + 2 = \underline{\hspace{2cm}}$

$5 + 6 = \underline{\hspace{2cm}}$ $6 + 6 = \underline{\hspace{2cm}}$ $9 + 9 = \underline{\hspace{2cm}}$ $6 + 7 = \underline{\hspace{2cm}}$

$7 + 2 = \underline{\hspace{2cm}}$ $9 + 1 = \underline{\hspace{2cm}}$ $2 + 8 = \underline{\hspace{2cm}}$ $0 + 7 = \underline{\hspace{2cm}}$

$$\begin{array}{r} 4 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 7 \\ \hline \end{array}$$

Number completed	
Number correct	

STUDENT'S CHECKLIST
MODULE 6: DAYS 1 TO 9

I can ...	Put a check mark beside the things you can do.
use base ten blocks to add large numbers	
use a pencil and paper to add large numbers	
regroup numbers when I add	
add large numbers to solve problems	
check my work by estimating or using a calculator	

STUDENT'S COMMENTS

What I found most difficult in this part of the module was _____

What I was good at in this part of the module was _____

HOME INSTRUCTOR'S COMMENTS

Check **yes** or **not yet** for each question.

Can the student do the following?

• use base ten blocks to add three-digit numbers	<input type="checkbox"/> yes	<input type="checkbox"/> not yet
• use a pencil-and-paper method to add three-digit numbers	<input type="checkbox"/> yes	<input type="checkbox"/> not yet
• use regrouping in addition problems	<input type="checkbox"/> yes	<input type="checkbox"/> not yet
• use a variety of strategies to add	<input type="checkbox"/> yes	<input type="checkbox"/> not yet
• check answers using estimation	<input type="checkbox"/> yes	<input type="checkbox"/> not yet
• check answers using a calculator	<input type="checkbox"/> yes	<input type="checkbox"/> not yet
• use a guess-and-check strategy to solve problems	<input type="checkbox"/> yes	<input type="checkbox"/> not yet

HOME INSTRUCTOR'S COMMENTS

GRADE THREE MATHEMATICS—ASSIGNMENT BOOKLET 6A ITEMS FOR MAILING

In the box to the left of the listed items, please check each item as you include it for mailing to the teacher.

DAY 6 AND DAY 8

- Sum-Fun Recording Sheet

DAY 9

- Assignment Booklet 6A